

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

Applicant(s) : Dr. Marc HUSEMANN and Dr. Stephan ZÖLLNER  
Serial No. : To Be Assigned  
Filed : Herewith  
For : PRESSURE-SENSITIVE ADHESIVE FEATURING LOW-  
OUTGASSING  
Art Unit : To Be Assigned  
Examiner : To Be Assigned

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February 12, 2002

BOX PATENT APPLICATION  
Hon. Assistant Commissioner For Patents  
Washington, D.C. 20231

**PRELIMINARY AMENDMENT**

Sir:

In advance of prosecution, kindly amend the above-identified application as follows  
and consider the following remarks:

**IN THE CLAIMS**

Please cancel the previous versions of the following claims and replace them with  
the following rewritten versions. Marked up copies showing the amendment since the  
previous versions are annexed as separate pages.



Claim 1 (amended). A pressure-sensitive adhesive composition based on (co)polymers of acrylic acid methacrylic acid, derivatives of acrylic acid or methacrylic acid, or combinations thereof, which has an at least two-phase domain structure and also an outgassing level of less than 10 µg/g, based on the weight of the composition, when measured by the tesa method.

Claim 4 (amended). The pressure-sensitive adhesive composition as claimed in Claim 2 or 3, wherein the monomers A are selected from the group consisting of the acrylates  $\text{CH}_2=\text{CHCOOR}$ , methacrylates  $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOR}$  and combinations thereof, in which the groups R are alkyl radicals having from 4 to 14 carbon atoms.

Claim 5 (amended). The pressure-sensitive adhesive composition as claimed in Claim 2 or 3, wherein at least some of the monomers A have a functional group R' which is capable of coordinative crosslinking.

Claim 6 (amended). The pressure-sensitive adhesive composition as claimed in claim 2 or 3, wherein at least some of the monomers A have a functional group R'' which possesses a cohesion-enhancing effect for the homopolymer or copolymer P(A), for the overall block copolymer or for both.

Claim 7 (amended). A process for preparing the pressure-sensitive adhesive composition of Claim 1, using a polyacrylate solution obtainable by free-radical polymerization, which comprises

a concentration process in which

- ♦ following polymerization, an entrainer is added to the polyacrylate solution,



- ◆ the polyacrylate solution with the added entrainer is passed into an extruder in which the polyacrylate solution is subjected to a carrier distillation,
  - ◆ as a result of the concentration a polyacrylate composition of a kind is produced which is processed further from the melt
- and the concentrated polyacrylate composition, optionally, is applied to a backing material.

Claim 8 (amended). The process as claimed in claim 7, wherein, following the concentration, a postpurification is carried out in at least one further step by adding the same or another entrainer to the concentrated polyacrylate composition and conducting a further carrier distillation in the extruder.

Claim 9 (amended). The process as claimed in Claim 7 or 8, wherein at least the extruder in the concentration step is a corotating or counterrotating twin screw extruder.

Claim 10 (amended). The process as claimed in Claim 7 or 8, wherein steam is used as entrainer.

Claim 11 (amended). An adhesive tape comprising a backing material having applied to one or both sides at least one film of a pressure-sensitive adhesive composition as claimed in Claim 2 or 3.

Claim 12 (amended). The adhesive tape as claimed in claim 7, wherein said backing material has an outgassing tendency of less than 5 µg/g.

Please add the following:



--Claim 13. The pressure-sensitive adhesive composition of Claim 4, wherein said alkyl radicals have 4 to 9 carbon atoms.

Claim 14. The process of Claim 8, wherein said further carrier distillation is conducted at higher temperatures and lower vacuum than the preceding distillation step.—

#### REMARKS

The Preliminary Amendment is being filed to eliminate multiple dependency, and to conform the claims to conventional format.

For the record, Applicants emphasize that although the claims were amended, and, therefore, might be argued to have been amended for a reason substantially related to patentability, a fair reading of the amended claims will reveal that the departures from the previous claims were for clarification purposes only, and that Applicants did not narrow the claims in any material respect. Therefore, Applicants submit that the amended claims are entitled to the full range of equivalents.

Early and favorable action is earnestly solicited.




ADDITIONAL FEE

Please charge any insufficiency of fees, or credit any excess, to Deposit Account No.

14-1263.

Respectfully submitted,

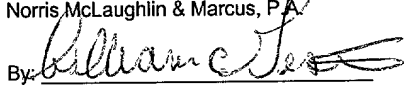
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I hereby certify that this paper is being deposited with the United States Postal Service as Express Mail, Label No. EV015943672US to: BOX PATENT APPLICATION, The Hon. Assistant Commissioner for Patents, Washington, D.C. 20231 on February 12, 2002.

Norris, McLaughlin & Marcus, P.A.

By 

Date: 2/12/02



**MARKED-UP COPIES OF AMENDED CLAIMS,  
SHOWING CHANGES RELATIVE TO PREVIOUS VERSION**

Claim 1 (amended). A pressure-sensitive adhesive composition based on (co)polymers of acrylic acid [and/or] methacrylic acid, [and/or] derivatives [thereof] of acrylic acid or methacrylic acid, or combinations thereof, which has an at least two-phase domain structure and also an outgassing level of less than 10 µg/g, based on the weight of the composition, when measured by the tesa method.

Claim 4 (amended). The pressure-sensitive adhesive composition as claimed in Claim 2 or 3 [either of claims 2 and 3], wherein the monomers A are selected from the group consisting of the acrylates  $\text{CH}_2=\text{CHCOOR}_1$  [and/or] methacrylates  $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOR}$  and combinations thereof, in which the groups R are alkyl radicals having from 4 to 14 carbon atoms[, preferably those having from 4 to 9 carbon atoms].

Claim 5 (amended). The pressure-sensitive adhesive composition as claimed in Claim 2 or 3 [any of claims 2 to 4], wherein at least some of the monomers A have a functional group R' which is capable of coordinative crosslinking.

Claim 6 (amended). The pressure-sensitive adhesive composition as claimed in claim 2 or 3 [any of claims 2 to 4], wherein at least some of the monomers A have a functional group R'' which possesses a cohesion-enhancing effect for the homopolymer or copolymer  $\text{P}(\text{A})_1$  [and/or] for the overall block copolymer or for both.



Claim 7 (amended). A process for preparing [a] the pressure-sensitive adhesive composition [as claimed in at least one of the preceding claims] of Claim 1, using a polyacrylate solution obtainable by free-radical polymerization, which comprises

a concentration process in which

- ◆ following polymerization, an entrainer is added to the polyacrylate solution,
  - ◆ the polyacrylate solution with the added entrainer is passed into an extruder in which the polyacrylate solution is subjected to a carrier distillation,
  - ◆ as a result of the concentration a polyacrylate composition of a kind is produced which is processed further from the melt
- and the concentrated polyacrylate composition, [where appropriate] optionally, is applied to a backing material.

Claim 8 (amended). The process as claimed in claim 7, wherein, following the concentration, a postpurification is carried out in at least one further step by adding the same or another entrainer to the concentrated polyacrylate composition and conducting a further carrier distillation in the extruder[, preferably selecting in each case higher temperatures and lower vacuums than in the preceding distillation step].

Claim 9 (amended). The process as claimed in Claim 7 or 8 [at least one of claims 7 and 8], wherein at least the extruder in the concentration step is a corotating or counterrotating twin screw extruder.

Claim 10 (amended). The process as claimed in Claim 7 or 8 [at least one of claims 7 to 9], wherein steam is used as entrainer.



Claim 11 (amended). An adhesive tape[, particularly for use in the electronics industry,] comprising [applied to one or both sides of] a backing material having applied to one or both sides at least one film of a pressure-sensitive adhesive composition as claimed in Claim 2 or 3 [at least one of claims 2 to 6].

Claim 12 (amended). The adhesive tape as claimed in claim 7, wherein said backing material has [a very low] an outgassing tendency[, preferably] of less than 5 µg/g.